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Systematic studies on *Rileya* Ashmead, 1888, with description of a new species from California, USA

(Hymenoptera, Eurytomidae)

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The species of *Rileya* Ashmead, 1888 are divided into two subgenera, *Rileya* s. str. and *Dillerileya* subgen. nov.; the former comprises six species groups and the latter comprises two species groups. The diagnostic characters for the subgenera and the species-groups are given. Some data found on the specimens of *Rileya cecidomyiae* Ashmead, 1888 and of *Rileya (Dillerileya) hanlari,* spec. nov. are stated.

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Introduction

In the past many works had been done on the genus *Rileya* Ashmead, 1888. All of those works were stated by Burks (1971), and the synonyms of the genus were listed such as *Ashmedia* Howard, 1889, *Xenopelte* Cameron, 1913, *Tragiicola* Brèthes, 1918, *Tragicola* Gemignani, 1933. *Calorileya* Crawford, 1910 which was synonymized by Gahan (1918) was given as a distinct genus by Burks (1971) and SubbaRao (1978). In his recent work, Bouček (1988) added *Pararileya* Girault, 1915 as syn. nov. and *Calorileya* by following Gahan's synonymy.

Burks (1971) gave good diagnostic characters of the genus *Rileya,* in general sense. The characters given by him cover most of the species in the genus. Bouček (1988) gave some reliable characters for recognation of the genus in the key to the genera of Australasian Eurytomidae. SubbaRao (1978) prepared a diagnostic key by following Gahan (1918) for the species of the genus with the descriptions of some new species. Zerova (1976) described a new species from Central Asia.

By studying the species of the genus, it is found that the species divide into two sections. One group has the gaster with first three terga visible and dorsally placed in the basal half of the gaster. There are several species-groups in this section: *cecidomyiae* Ashmead, 1888, *collaris* Howard, 1889, *mellea* Ashmead, 1894, *insularis* Ashmead, 1894, *albicornis* Kieffer & Jörgerssen, 1910, *couridae* (Cameron, 1913), *compressiventris* Gahan, 1918, *desantisi* SubbaRao, 1978, *trinidadensis* SubbaRao, 1978 belong to a group by carinate scrobal sides, cheeks separated by a carina from face, pronotum carinate laterally. *Hegeli* Girault, 1916, *haumani* (Brèthes, 1918) belong to a group in having carinate scrobal sides, cheeks not separated by a carina from face, pronotum carinate laterally. *Gallicola* Kieffer & Jörgerssen, 1910 is a species unique in having frons without scrobal cavity. *Americana* Girault, 1916, *similaris* Gahan, 1918, *opuntiae* Gahan, 1936, *gigas* SubbaRao, 1978 constitute another

group in having the carinate scrobal sides, pronotum ecarinate laterally. *Spadix* (Girault, 1915), *asiatica* Zerova, 1976, *vardyi* SubbaRao, 1978 belong to a group by the carinate scrobal sides, the propodeum with the transverse costula adhering in the middle to the anterior margin but with a distinct median carina, simple stigmal vein in the forewing (Bouček 1988). *Megastigma* (Ashmead, 1894), *cearae* (Crawford, 1910) belong to a group by the carinate scrobal sides, pronotum carinate laterally, forewing completely ciliated, and stigmal knob enlarged and round. In the other section the gaster with only the second gastral tergum of the first three terga visible dorsally. The first tergum is very small, the third is hidden under the second. In one species of this section the gaster with two visible terga basally. There are two species-groups in this section el: *orbitalis* Ashmead, 1904 is a species unique in having the gaster with two visible terga dorsally. *Pulchra* Ashmead, 1904, *heterogaster* Gahan, 1918, *canalicoxa* SubbaRao, 1978 and a new species from California belong to a group in having the ecarinate scrobal sides, cheeks not separated by a carina from face, and the propodeum ecarinate.

In the development of the sections the genus *Rileya* is divided into two subgenera, viz., *Rileya* s. str. and *Dillerileya,* subgen. nov. The subgenera are characterized as follows:

Subgenus *Rileya* Ashmead, 1888

Rileya Ashmead, 1888, Entomol. Amer. **4:** 42–43 (Type-species: *Rileya cecidomyiae* Ashmead)
Ashmeadia Howard, 1889, Canad. Entomol. **21:** 59 (New name, unnecessarily proposed for *Rileya* Ashmead)
Calorileya Crawford, 1910, U. S. Natl. Mus. Proc. **39:** 236 (Type-species: *Calorileya cearae* Crawford)
Xenopelte Cameron, 1913, Timehri, Jour. R. Soc. Agr. Dem. **3:** 126 (Type-species: *Xenopelta couridae* Cameron)
Pararileya Girault, 1915, Queensland Mus. Mem. **4:** 274 (Type-species: *Pararileya spadix* Girault)
Tragiicola Brèthes, 1918, Soc. Entomol. France Bul.: 83 (Type-species: *Tragiicola haumani* Brèthes)

Characters of the subgenus. Gaster with first three terga visible and placed dorsally in the basal half; scrobal sides mostly carinate (in *gallicola* it is not developed); cheeks separated or not separated by a carina from face; pronotum mostly carinate laterally (in a group it is not carinate); forewing with bare places basally and with simple stigmal vein (in a group it is completely ciliated and with an enlarged and round stigmal knob).

In the Zoologische Staatssammlung, München, there are 4♀♀ of *Rileya (Rileya) cecidomyiae* Ashmead. The data on them as follows: 1♀, Palm Springs, California (29.III.1979), 1.IV.1979, ex *Atriplex* gall; 1♀, Indian Wells, California, 8.IV.1980; 2♀♀, Palm Desert, Indian Wells, California, 11.IV.1980 (The last three specimens were collected from *Atriplex canescens* with stem galls). All specimens were collected by F. Bachmaier.

Subgenus *Dillerileya* subgen. nov.

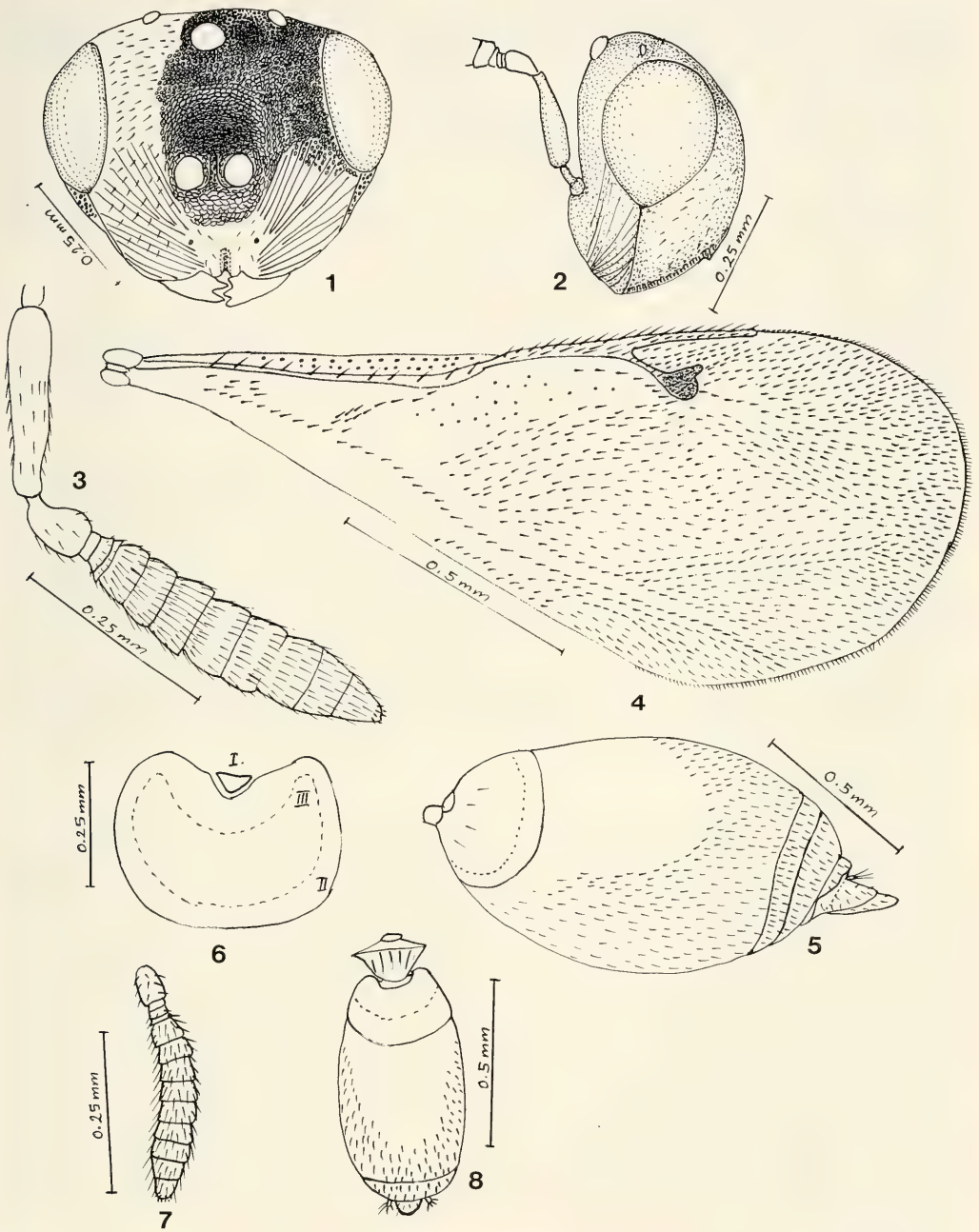
Figs 1–8

Type-species: *Rileya (Dillerileya) hanlari,* spec. nov.

Characters of the subgenus. Gaster with only the second gastral tergum of the first three terga visible dorsally. The first tergum minutly developed, the third completely hidden under the second. In one species *R. orbitalis,* gaster with two visible terga basally. Scrobal sides ecarinate; cheeks not separated by a carina from face; pronotum ecarinate; forewing with bare places basally, and with slightly enlarged and rounded stigmal knob.

The species of the subgenus *Dillerileya* are: *Rileya (Dillerileya) orbitalis, R. (D.) pulchra, R. (D.) heterogaster, R. (D.) canalicoxa, R. (D.) hanlari,* spec. nov.

The specimens of the new species were found in the collection of the Zoologische Staatssammlung, München. All were collected from *Larrea tridentata* by F. Bachmaier during his stay in California, USA.



Explanations of the figures: Figs 1–8. *Rileya (Dillerileya) hanlari*, spec. nov. 1–2. ♀, head. 1. Frontal view. 2. Lateral view. 3. ♀ antenna. 4. ♀ forewing. 5. ♀ gaster with petiola. 6. first three terga of ♀ gaster. 7. ♂ antenna. 8. ♂ gaster with petiola.

Rileya (Dillerileya) hanlari, spec. nov.

Figs 1–8

Types. Holotype: Female, Rancho Mirage, California, USA, 24–26.IV.1980, collected from *Larrea tridentata* (Leg. Bachmaier), in Zoologische Staatssammlung, München. – Paratypes: 3 ♀♀, 1 ♂, same data as the holotype; 2 ♀♀, Smoke Tree Village, California, USA, 24.IV.1979, collected from saltbush (Leg. Bachmaier). 2 ♀♀ paratypes in the author collection, the others in Zoologische Staatssammlung.

Diagnosis. *Rileya (Dillerileya) hanlari*, spec. nov. close to *R. (D.) canalicoxa* in having body dark brown to testaceous in the key of SubbaRao (1978). The new species differs from *canalicoxa* as follows: In the new species hind coxa minutely reticulated (in *canalicoxa* it has transverse circular carinae); female antenae with funicular segments distictly transverse (fig. 3) (in *canalicoxa* funicular segments quadrate); marginal vein almost equal to postmarginal vein (fig. 4) (in *canalicoxa* marginal vein twice as long as postmarginal vein).

Description.

Female. Length 1.8–2.6 mm (holotype 2.6 mm). Body black, except gaster basally and ventraly testaceous; scapus, also sometimes flagellum, apical ¼ of femora, tibiae, basal four segments of tarsi yellow; flagellum mostly, basal ¾ of femora, pedicellus, tegulae brownish yellow; wings hyaline, veins yellow; parastigma apically, stigma fuscous.

Head hardly broader than pronotum (31 : 28), distinctly wider than high (fig. 1), dorsally transverse, occiput immarginate, temples distinct, eye oval, height of eye slightly greater than malar space, malar grove distict, lower face with fine striation radiating from sides of clypeus which is smooth, deeply notched medially, cheeks (fig. 2) carinate laterally, which develops a tooth at the level of ventral edge of eye, and continues above occiput, frons wide, scrobe cavity deep near toruli, shallow above, not reaching median ocellus, its margins not carinate, antennal toruli below centre of face, but slightly above level of ventral edge of eyes, interantennal proces slightly developed, median ventral carina of scrobe cavity wanting; antennae (fig. 3) 13-segmented, its formula 11353, scapus shorter than width of eye, not reaching median ocellus, funicular segments transverse almost thrice as broad as long, gradually widening, distinctly wider than pedicellus, which is about as long as first four flagellar segments together, clava slightly longer than two preceeding segments together, slightly tapering apicaly.

Thorax dorsally minutely shagreened, covered with minute white hairs, pronotum quadrangular, slightly broader than mesoscutum, sides parallel, ecarinate, shoulders vertically slightly edged, but not carinate, mesoscutum as long as pronotum medially, notauli fine but distict throughout, scutellum as long as broad, slightly longer than mesoscutum, metanotum very short, almost nill medially, dorsellum indistict, propodeum steep, as long as half of scutellum, medially with a short median carina which is developed by meeting of the crescentic transverse carinae between apical corners of propodeum, between this carinae and basal margin of propodeum with some longitudinal carinae, nucha short, its sides parallel, mesopleuron carinate posteriorly and anteriorly, ventrally with a small shelf in front of mid coxae, prepectus very small, its surface smooth; legs with femora slightly thickened, hind coxae dorsally bare, laterally with some hairs, minutely reticulated, hind tibiae with two spurs, one of them about half of the other; forewing (fig. 4) with basal cell and speculum closed below by cubital hair line, costal cell with two hair lines on lower surface, disc with modarately dense hairs, marginal vein ⅔ submarginal vein, and as long as postmarginal vein, stigmal vein about half of postmarginal, stigmal knob enlarged, its width about distance between its upper margin and postmarginal vein.

Petiola short, cylindrical, as long as broad; gaster (fig. 5) with raised, minute reticulation, first three terga dorsally placed, but only second tergum visible, first very small, attached in depression of basal margine of second tergum, third hidden under the second (fig. 6), 4th tergum making up

3/5 dorsal surface of gaster, 5th and 6th narrow, almost concealed by fourth tergum, 7th narrowly chitinized above short epipygium, ovipositor short, directed straight posteriorly.

Male. Length 1.6 mm. Similar to female except as follows: Antenna (fig. 7) having flagellum with slightly erect hairs; petiola (fig. 8) distinct, conicle, only slightly broader in basal margin than long medially, basal margine carinate, its dorsal with some rugae; gaster (fig. 8) with three visible terga which are 3rd, 4th and 5th, their length in ratio:7:17:4 respectively, the others hidden under them, cerci and tip of gaster slightly excerted.

Host. Unknown, the specimens were collected from *Larrea trinotata.*

Distribution. California, USA.

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